
K E N T U C K Y

Land & Air & Water

Volume 10, Number 1

Spring 1999



Kentucky Natural Resources and Environmental Protection Cabinet

**Kentucky Natural Resources
and
Environmental Protection
Cabinet**

James E. Bickford
Secretary

Bruce Williams
Deputy Secretary

Commissioners

Robert Logan
Department for Environmental
Protection

Hugh Archer
Department for Natural Resources

Carl E. Campbell
Department for Surface Mining
Reclamation and Enforcement

Barbara A. Foster
General Counsel

Paul E. Patton, Governor

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Bruce Williams is new deputy secretary



Bruce Williams

Roy Massey, who was named chief of staff for Lt. Gov. Steve Henry.

Deputy Secretary Williams has served 27 years in state government including 12 years with the cabinet.

Gov. Paul Patton named Bruce Williams deputy secretary of the Natural Resources and Environmental Protection Cabinet effective December 1998.

Williams replaced

He began his career with state government in 1971 with the old Department of Corrections, then moved to the Legislative Research Commission, where he assisted a newly formed legislative budget staff in preparing the first state legislative budget.

Williams has been serving the cabinet as a senior staff advisor working primarily on legislative issues. He also worked on the Governor's Office legislative team during the 1996 and 1998 legislative sessions.

Williams, his wife Cary and son Chris live in Georgetown.

Dr. Eunice L. Johnson appointed to Kentucky State Nature Preserves Commission

Gov. Paul E. Patton announced in November 1998 the appointment of Eunice Louise Johnson, M.D., of Boonesville, to the Kentucky State Nature Preserves Commission, representing at-large members. Dr. Johnson will serve a term expiring July 1, 2001.

Dr. Johnson worked for the Kentucky River Medical Center. She is a member of the Board of Health in Breathitt County, the American College of Obstetrics and Gynecology and the Kentucky Medical Association.

The mission of the Kentucky State Nature Preserves Commission is to protect Kentucky's natural heritage by identifying, acquiring, and managing natural areas that represent the best known occurrences of rare species, natural communities and significant natural features in a statewide nature preserve system. The commission works with others to protect biological diversity and to educate Kentuckians on the value and purpose of nature preserves and biodiversity conservation.

Former cabinet official Gene Peter dies

Gene Peter, 65, of Frankfort, former deputy secretary of the Natural Resources and Environmental Protection Cabinet, died Nov. 20, 1998, at the Frankfort Regional Medical Center.

Mr. Peter, a longtime state official, held several appointments under six Kentucky governors. He retired in 1995 after serving in dual positions as commissioner of the Kentucky State Police and secretary of the Justice Cabinet.

Mr. Peter was a native of Tell City, Ind. He was a former president of the Kentucky Jaycees and the American Association of Motor Vehicle Administrators Region 2, an Army veteran of the Korean War, and a member of the Church of the Good Shepherd in Frankfort.

Mr. Peter is survived by his wife, the former Mary Catherine Schupp; a son, Gregory J. Peter; two daughters, Mary Jean Eddins and Brenda M. Rawlings; two brothers, the Rev. Martin A. Peter and Larry C. Peter; a sister, Patricia Stenftenagel; and four grandchildren.

Memorial gifts may be sent to his church's building fund, 310 Wapping St., Frankfort, Ky. 40601, or to the Louisville Deaf Oral School, 414 W. Ormsby Ave., Louisville, Ky. 40203-3088.

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For the sixth year, the spring issue of *Land, Air & Water* is providing readers with an annual report on the cabinet's efforts to protect and preserve Kentucky's land, air and water resources.



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Kentucky coal -- an
important natural resource.
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About the cover photo:

The Sharp-lobed hepatica (*Hepatica acutiloba*) is one of the first wildflowers to bloom in the spring--a welcome sign that winter is over. It is found from Canada south to Georgia. In Kentucky, it is scattered in Central and Eastern regions in upland forests. This photo was taken by John MacGregor, U.S. Forest Service.

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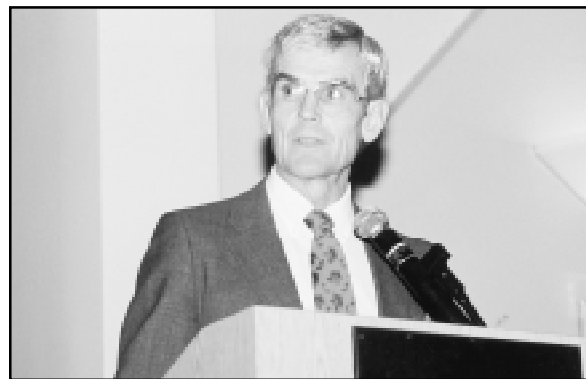


The 23rd Annual Governor's Conference on the Environment, sponsored by the Natural Resources and Environmental Protection Cabinet, was held in

Bowling Green in October 1998. The conference focused on water issues facing Southcentral Kentucky and all of the Commonwealth.

Sessions featured discussions by Kentucky farmers, representatives from agricultural industries, state and federal government, and environmental groups. Major topics included impacts to water quality by animal feeding operations, mining, conservation and forestry practices.

The Governor's Environmental Excellence Awards were presented during the conference and are highlighted below. The cabinet's Outstanding Employees were also recognized and are honored on Page 2 of this issue.



Mike B. Cook, director, Office of Waste Water Management, U.S. EPA, opened the conference with a history of federal programs and activities involved in water quality and supply. Cabinet photo

Environmental Excellence awards presented

The Natural Resources and Environmental Protection Cabinet presented twelve Environmental Excellence Awards during the 23rd Annual Governor's Conference on the Environment.

Kentuckians, businesses and organizations, schools and universities were awarded for their outstanding contributions to the protection and preservation of Kentucky's natural resources and its environment. Recipients of the awards were:

Georgetown Middle School, Secretary's Award. Georgetown Middle

School was recognized for "A Creek Runs Through It," a program that teaches students in grades 6-8 the importance of water quality through water testing in Elkhorn Creek, nature walks and other environmental activities. (See article on Page 10.)

Delta Natural Gas Co. Inc., Environmental Excellence Award for Forestry. Awarded for unique methods used while constructing a gas pipeline across the Kentucky Ridge State Forest.

Fleming County Conservation District, Environmental Excellence

Award for Soil Conservation. The district was chosen for this award for its involvement in improving management of watersheds through conservation practices affecting the quality of water in Fleming County.

Morehead State University, Environmental Excellence Award for Energy Conservation. The university was recognized for its participation in the Institutional Conservation Program through the Kentucky Division of Energy and for its extensive recycling program.

Continued on Page 24



Bickford sets priorities for top ten list

1) Illegal Dumping. Over the past three years the cabinet has focused special attention on this statewide problem and last year began using surveillance cameras at active dumps to tape violators. Since the illegal dumping initiative began, cabinet inspectors have investigated over 2,000 dumps, issued over 1,200 Notices of Violation and have had more than 500 dumps cleaned up by the person(s) responsible.

2) Regionalization of Water/Sewer Systems. One problem, which plagues

many small communities in the Commonwealth, is water/sewer treatment. These communities either lack the facilities or cannot afford to hire and keep qualified operators. Maintaining facilities is also a problem. One solution is an approach where several communities combine water/sewer treatment operations at a regional level, sharing the cost and hopefully lowering the cost of operations to customers.

3) Scrap Tire Cleanup. The cabinet has utilized the Waste Tire Trust Fund the past two years to pay for the cleanup of over three million waste tires across the state. Under legislation passed by the 1998

General Assembly, the cabinet is now using the Fund to pay for a Tire Amnesty Program. Every county in the state over the next three years will have an amnesty period for citizens to turn in waste tires. A contractor paid by the state will properly dispose of the tires.

4) Implementation of Forestry Act. The Division of Forestry is implementing legislation passed by the 1998 General Assembly, including holding Master Logger training programs for foresters in the state and finalizing regulations. Nominations for the Forestry Best

Continued on Page 19

Outstanding cabinet employees honored

The Natural Resources and Environmental Protection Cabinet Outstanding Employees for 1997 were recognized during the 23rd Annual Governor's Conference on the Environment held in October. Seventeen employees were honored:

Dept. for Natural Resources

Kerry Hayes, office coordinator in the Division of Forestry.

Fawn Pace, administrative secretary senior in the Division of Forestry.

Peter W. 'Bill' Walton, senior forester with the Division of Forestry.

Dept. for Surface Mining Reclamation and Enforcement

Ossama Ateyeh, environmental engineer assistant chief in the Division of Permits.

Sandra Bennett, secretary chief in the Division of Field Services in the Middlesboro Regional Office.

Judy Tipton, environmental technologist chief in the Division of Field Services.

Larry Wilson, environmental inspector III with the Division of Field Services in the Prestonsburg Regional Office.

Jerome 'Jerry' Wright, environmental engineer consultant with the Division of Abandoned Mine Lands.

Dept. for Environmental Protection

William Blacketer, Jr., environmental control supervisor with the Division for Air Quality in the Bowling Green Regional Office.

Daniel Gray, environmental engineering branch manager with the Permit

Review Branch in the Division for Air Quality.

Donna Hall, environmental technologist chief with the Division of Water.

Sandra Head, administrative specialist principal with the Division for Air Quality.

Martin Luther, environmental technologist chief in the Division for Air Quality.

Kumar Pole, environmental engineer in the Division for Air Quality.

Gleason Wheatley, chemistry lab manager for the Division of Environmental Services.

Office of Legal Services

Michael Wood, attorney III in the Office of Legal Services.

Office of the Secretary

Velma Graves, administrative specialist principal in the Budget Office.



Left to right, Surface Mining Commissioner Carl Campbell, Larry Wilson, Sandra Bennett, Judy Tipton, Jerome Wright, Ossama Ateyeh and Secretary James Bickford.

**Not pictured,
Michael Wood,
Office of Legal
Services.**

Cabinet photos



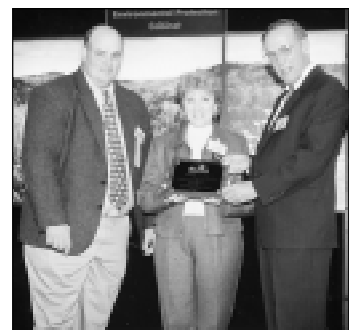
Left to right, Environmental Protection Commissioner Robert Logan, Kumar Pole, William Blacketer, Jr., Martin Luther, Daniel Gray, Sandra Head, Gleason Wheatley and Secretary James Bickford.



Left to right, Budget Office Manager Melanie Bailey, Velma Graves and Secretary James Bickford.



Left to right, Natural Resources Commissioner Hugh Archer, Peter Walton, Kerry Hayes, Fawn Pace and Secretary James Bickford.



Left to right, Commissioner Robert Logan, Donna Hall and Secretary James Bickford.

Dept. for Surface Mining Reclamation & Enforcement

Enforcement role focuses on environmental problems, violations of the law

The Department for Surface Mining Reclamation and Enforcement is responsible for administering the Surface Mining Control and Reclamation laws that encompass every facet of coal mining in Kentucky.

The department has three divisions with a workforce of more than 400 employees. Department job duties include review and issuance of mine permits, enforcement of environmental regulations, reclamation of abandoned mined lands, and all support functions.



DSMRE photos



Calendar Year 1998

Number of permits unless otherwise indicated.

Coal

Surface Mines	1,014
Underground Mines	913
Preparation Plants	326
Other Facilities	214
Total Acres Permitted	1,623,692
Disturbed Acres	261,738
Active Coal Producers	846

Inspection Activity

On Site Inspections	29,825
Notices of Violations	819
Standards Cited	1,395

Bond Release Activity

Phase One	337
Number of Acres	12,254
Phase Two	239
Number of Acres	7,341
Phase Three	683
Number of Acres	18,071

Non Coal Section

Number of Limestone Quarries	120
Number of Sand and Gravel	38
Clay & Shale Permits	42
Total Acres Permitted	34,580
Number of Inspections	1,966

Abandoned Mined Lands

Federally-Funded Reclamation Projects

Projects Completed	27
Portals & Shafts Closed	60
Structures Removed/Demolished	4
Retaining Walls Installed	13
Earthwork (in cubic yards)	1,257,000
Grass Seed Applied (in pounds)	27,900
Acres Reclaimed	289

Water Supply Projects

Projects Completed	5
Water Main Installed (miles)	49.3
Meters Installed	1,072

Bond Forfeiture Program

Number of Permits Reclaimed	147
Total Acres	1,852

Performance bonds are released in three steps. The first is regrading to approximate original contour, second is establishment of vegetation, and third is the complete release based upon achieving the post-mining land use.

MESSAGE FROM COMMISSIONER CARL CAMPBELL

The federal Office of Surface Mining has completed its sixteenth annual review of the department's performance and reported that "no programmatic concerns were identified." This excellent rating was the result of much hard work from each employee, and, of course, I am pleased with this effort. I believe we are achieving our primary responsibility of protecting the land, air and water, as well as each citizen of the Commonwealth, from any potentially harmful effects of mining.

The nature of our enforcement role focuses on environmental problems and violations of the law. Historically, the miners who have performed reclamation work of the highest caliber and the department staff charged with inspecting these sites have not always received enough recognition for their work.

In 1998, the department established the Commissioner's Award for Excellence in Reclamation, which is presented to the individuals responsible for implementing environmentally sound mining techniques and performing outstanding reclamation work. This year, a total of nine awards were presented: five to coal mine operators, one to a limestone quarry, and three to contract operators performing reclamation for the permits where bonds were forfeited.

In the upcoming year, planned improvements include the implementation of electronic submittal of permit applications, continued improvement in the monitoring of mine operations, and quick response to concerns from citizens. In addition, several topics have been identified for special studies that will be conducted jointly with the Office of Surface Mining. The goal of these studies is to continue to improve the way the department administers the federal surface mining laws.

Department for Surface Mining Reclamation and Enforcement (502) 564-6940; FAX (502) 564-5698

<http://kydsmre.nr.state.ky.us>

- Regulates the surface effects of mining and exploration activities pursuant to operation KRS 350.
- Reviews applications and issues permits for surface coal mines, the surface effects of underground mines, rock quarries, clay, sand, and gravel pits, and preparation plants.
- Performs inspections of permitted operations and enforces environmental regulations.
- Monitors coal and mineral exploration activities.
- Oversees the reclamation of abandoned and forfeited mine sites.
- Responds to citizen complaints related to mining topics.
- Holds public hearings and conferences in mining communities to gain citizen input and address citizen concerns.

Division for Air Quality

Clean air for Kentucky is DAQ responsibility

Field Operations. During 1998, the Field Operations Branch inspected 4,027 sources of air pollution. Special emphasis was given to inspections of major Title V sources. In-depth inspections of major sources accounted for 884 of the total inspections.

One or more violations of air quality regulations were documented at about 20 percent of the inspections during the year. A total of 556 official Notices of Violation were issued as a result of the violations that were documented.

During the year, 1,800 citizen complaints were recorded and investigated. This is a 12 percent increase from 1997 figures. Odor from agricultural operations again accounted for a major portion of the citizen complaints filed with the division.

The following is a breakdown of inspections during 1998: Scheduled Inspections of Permitted Sources, 884; Illegal Dumps and other Self-Initiated Inspections, 504; Complaint Investigations, 1,052; Total Citizen Complaints, 1,800; Point Source Compliance Evaluations, 110; Permit Review Branch Requests, 202; Enforcement Follow-up Evaluations, 388; Tank Truck, 13; and Asbestos, 874.

Asbestos. During 1998, division staff did 900 inspections at 1,250 demolition/renovation projects, with a compliance rate of 93 percent. These projects saw the removal of about four million square feet and 300,000 linear feet of asbestos materials.

The division also oversees asbestos management in Kentucky's schools. In 1998, staff reviewed asbestos management plans for 476 schools and planned updates for 662 schools. Since 1988, when the asbestos-in-schools regulations were adopted, division staff members have reviewed management plans for every one of Kentucky's 3,800 school buildings. Additionally, they visited 53 schools in 1998 to verify that the plans accurately portrayed the school's asbestos situation and to ensure that school asbestos professionals were properly qualified.

And how clean is it?

The Technical Services Branch operates an extensive air-monitoring network that measures the ambient (outdoor) air quality throughout the Commonwealth. Historically, this information has been made available to the public in the form of reports and through the Pollutant Standard Index Report, which is a voice recording issued twice daily. It can be heard by calling 800-AIR-INKY (800-247-4659).

In order to provide better information to the general public, the division is participating in a program that will allow more up-to-date ambient air quality data to be made available through the Internet by a project referred to as ozone mapping. By connecting to the ozone-mapping site, Internet users can see maps and/or movies that will graphically show the levels of ozone that have been measured by the monitors. Last year, Kentucky provided data from eight monitoring sites and intends to increase this to 20 in 1999. Users can gain access to the maps by connecting to EPA's AIRNOW web site at www.epa.gov/airnow/. The website is user friendly and provides complete information on how to access the maps and interpret their meaning.

The division certified 142 asbestos contractors and 1,480 individual asbestos professionals in 1998. DAQ put on workshops and presentations statewide for contractors, industry officials, school administrators, state fair visitors, and others. In addition, the division adopted regulation revisions that clarify removal and training requirements and reflect new federal mandates.

Permit review. The Permit Review Branch has just completed its second full year of implementing the Clean Air Act Title V operating permit program. To date, 105 draft permits have been prepared for public and EPA review and 42 final permits have been issued. Overall, the branch estimates that it's about 25

percent of the way through the initial round of Title V permitting. Additionally, 50 draft and 43 final permits have been issued, which contain limitations on the potential-to-emit in order to preclude the requirement to obtain a Title V permit. Nearly 200 other sources have postponed the necessity of filing a Title V application until at least December 14, 2000, through compliance with Kentucky's exclusionary rules.

Minor sources were deferred from Title V permitting until Dec. 14, 2000. However, for certain source categories that are subject to federal standards for hazardous air pollutants such as chrome plating, halogenated solvent degreasing,

Continued on Page 5

Division for Air Quality

(502) 573-3382; FAX (502) 573-3787

<http://www.state.ky.us/agencies/nrepc/dep/daq/daqhome.html>

- Manages the air pollution program for all of Kentucky except Jefferson County.
- Develops regulations and programs to protect air quality.
- Operates an air monitoring network.
- Issues permits to air pollution sources.
- Evaluates compliance with permits and regulations through inspections and enforcement.
- Investigates citizen complaints.
- Oversees nonresidential asbestos removals and asbestos management in schools.
- Conducts education programs and distributes information on air quality issues.

Division of Environmental Services

(502) 564-6120;
FAX (502) 8930

- Provides laboratory services necessary to characterize, evaluate and document the nature and extent of environmental pollutants.
- Provides technical assistance to commercial and municipal laboratories within the state.
- Certifies laboratories performing chemical analysis of drinking water.
- Performs risk assessment reviews and provides technical consultations on risk-related issues.

Division of Environmental Services

Lab work supports DEP activities



Ed Colley, inorganic chemist, performing total organic carbon analysis.
DES photo

The Division of Environmental Services has completed another productive year addressing the complex laboratory and risk assessment/risk review needs of the Department for Environmental Protection.

Projects that have been supported include the ambient monitoring programs for rivers and groundwater including the citizen-involved Watershed Watch, the cleanup and closure of leaking underground storage tanks, the monitoring of groundwater at landfills and the monitoring of air toxics through the Tri-State Geographic Initiative in the Ashland, Kentucky area.

The division was also honored in 1998 by the selection of one of its managers for a cabinet Outstanding Employee Award. Gleason Wheatley, Inorganic Branch manager, was chosen for this distinction by a committee of peers who recognized his leadership abilities in the laboratory as well as in the department.

Division for Air Quality

Continued from Page 4

and perchloroethylene drycleaners, the deferral expires in December 1999. State and local permitting authorities have petitioned U.S. EPA for at least a five-year extension of the minor source deferrals. However, in the event that the extension is not granted, minor sources that are subject to federal emission standards should begin preparations to submit Title V permit applications in 2000 to 2001.

More than 250 permits to authorize construction/modification of sources were processed in 1998. Additionally, about 115 minor source operating permits were issued. About 350 registra-

tions and permit inquiries were processed in 1998.

Program Planning. The division worked extensively with other state and local air quality agencies to evaluate and to comment on a proposal by the U.S. EPA that requires massive reductions in emissions of oxides of nitrogen throughout the Eastern United States. The division examined the allegation that pollutants transported by wind over very long ranges contributed significantly to failures in the Northeastern United States to achieve the one-hour ozone standard, and concluded that such impacts amounted to no more than a few parts per billion of ozone. The division recognizes, however, that emission reductions creating small improvements far away

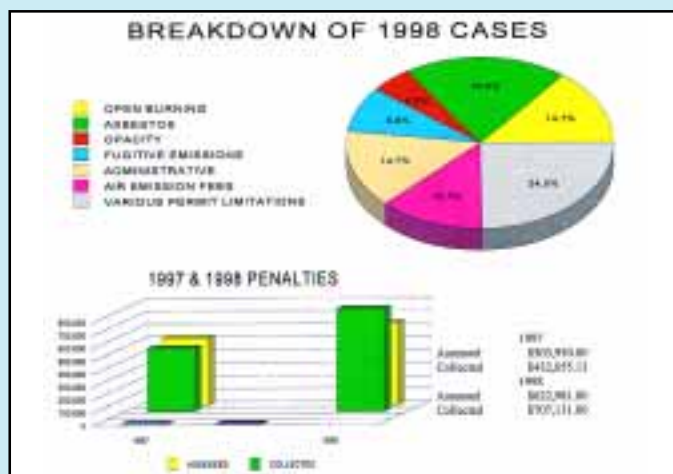
may be more beneficial to closer areas.

Despite the division's recommendations, the U.S. EPA adopted the reduction requirements. Accordingly, Kentucky is required to reduce emissions of oxides of nitrogen by about 75,000 tons per ozone season (May through September). All controls and procedures to achieve the reductions must be in place prior to the ozone season in 2003. The division anticipates that this program will significantly impact those sources generating electricity in Kentucky, probably causing them to achieve 65 percent to 70 percent reductions in their oxides of nitrogen emissions. The U.S. EPA expects full compliance with the one-hour ozone standard by 2003, and full compliance with the new eight-hour ozone standard by 2007.

Enforcement. Despite a decrease in referrals for enforcement from 103 cases in 1997 to 89 cases in 1998, the Division for Air Quality's Enforcement Branch had another busy year.

Penalty assessment and collection increased by 14.2 percent and 11.9 percent, respectively. This is largely due to actions taken for violations by Title V facilities. The closure of 100 cases during the period resulted in an 11 percent decrease in the caseload. A breakdown of the types of violations cited revealed that an increase of 10.3 percent had occurred in various administrative violations from that found in 1997.

However, this growth was countered by a 7.5 percent decrease in open burning cases. The enforcement staff hopes this means DAQ is getting the message out that open burning is unhealthy and illegal. Other categories of violations varied little.



Public involved in many DOW activities

By Maleva Chamberlain

Division of Water

The Division of Water was involved in many major activities during 1998, the majority of which included public participation.

Drinking Water. The 1996 amendments to the federal Safe Drinking Water Act (SDWA) resulted in several new initiatives that have brought about significant changes to the drinking water program in the division.

Drinking Water State Revolving Fund. Kentucky submitted its 1997 Intended Use Plan to EPA and received its first capitalization grant award of \$12.55 million to establish the fund. Monies will be used to improve drinking water infrastructure, administer the fund, and develop and implement new programs such as capacity development and source water assessment.

Capacity Development. The Kentucky General Assembly passed legislation authorizing the cabinet to establish and implement a strategy to assist existing public water systems in achieving technical, managerial, and financial capacity to meet the federal act's requirements; to block the creation of a new system without capacity and not approve plans; and to assist systems in submitting a strategy as part of the county water supply plan.

Source Water Assessment and Protection. This legislation also authorized the cabinet to develop and conduct a Source Water Assessment and Protection Program (SWAPP). Kentucky became the first state to receive approval from EPA for its SWAPP (see more information on Page 7).

Area-wide Optimization Project (AWOP). In an attempt to help prepare Kentucky's public water systems to comply with new rules, Kentucky became an active participant in the AWOP, a pilot project with Alabama, Georgia, South Carolina, U.S. EPA Region 4 and the Center for Drinking Water Optimization in Cincinnati. The overall goal of this effort is to minimize the public health risk of exposure to *Cryptosporidium* and *Giardia* from public drinking water systems.

Division of Water

502/564-3410; FAX (502) 564-0111

<http://water.nr.state.ky.us/dow/dwhome.htm>

The mission of the Division of Water is to manage, protect and enhance the water resources of the Commonwealth for present and future generations through voluntary, regulatory and educational programs. The division accomplishes this mission through the following efforts:

- Enforces state and federal laws designed to protect surface and groundwater quality;
- Monitors surface waters to determine water quality and to measure the effects of pollution on aquatic life and habitat;
- Issues permits to control the amount of pollutants being discharge to the surface waters of the Commonwealth;
- Reviews plans and issues permits for construction of wastewater treatment facilities and collection systems;
- Reviews plans and approves construction of drinking water treatment facilities and distribution systems;
- Monitors water and wastewater treatment plants;
- Coordinates the Environmental Response Team;
- Trains and certifies water well drillers and operators of both water and wastewater treatment plants;
- Aids communities in preparing water supply plans;
- Issues permits for water withdrawal and for construction in floodplains;
- Inspects dams listed in the state's inventory;
- Coordinates Wild Rivers program;
- Works under an agreement with the Kentucky Infrastructure Authority to make low-interest loans available for construction of wastewater facilities.

Peer Review Program. The cabinet is a partner in the Peer Review program being established by the Kentucky Association of Counties. Other partners are the Kentucky Rural Water Association and the Kentucky Water and Wastewater Operators Association. Training sessions have been held with Drinking Water Branch staff making presentations and answering questions about the program and the proposed System Self-Evaluation survey and the Peer Review Evaluation survey. Volunteers are enthusiastic about the program to help public water systems do a better job of supplying safe drinking water to the public.

State Annual Compliance Report. States are required to produce an annual compliance report on public water system violations. Kentucky's 1996 and 1997 reports may be obtained from the Drinking Water Branch or found at the following web site: <http://water.nr.state.ky.us/dow/compsum.htm>

Consumer Confidence Rule (CCR). The CCR was promulgated Aug. 6, 1998, requiring community public water systems to prepare and distribute to their customers an annual report on the source of their drinking water and the levels of contaminants found in the drinking water. The purpose of these reports is to increase consumer awareness.

Violations. Notices of Violation were mailed in November to 394 water systems covering 7,264 violations. These violations were for failure to monitor or report analytical results for inorganic, synthetic organic, volatile organic, and unregulated contaminants for the compliance period 1993-1995. Compliance determinations were delayed due to circumstances beyond the control of the Drinking Water Program. **At no time was the public health at risk.**

Continued on Page 7

Source Water Assessment and Protection Program. Kentucky became the first state to receive approval from the U. S. Environmental Protection Agency for its Source Water Assessment and Protection Program.

"EPA commends Kentucky for a program that establishes a high expectation for source water protection activities at the state and local level. These achievements distinguish the Commonwealth of Kentucky as a national leader in source water assessment and protection," said John Hankinson, regional administrator for EPA Region IV, in a letter granting the approval.

Kentucky was ahead of other states in preparing its SWAPP because it already had in place two programs, Water Supply Planning and Wellhead Protection, that include many of the provisions required by the Safe Drinking Water Act. Both programs require public participation, delineation of source water watersheds and recharge areas for each public water supply source, a contaminant source inventory with relative susceptibility (risk) assessment, and recommendations for protection.

See the final document at <http://water.nr.state.ky.us/dow/swap/>

1998 303(d) List of Impaired Waters. A section of the Clean Water Act requires each state to periodically identify specific waters where water quality problems exist. In addition, the state is also required to prioritize the list of impaired waters, to calculate an allowable amount of pollutants for those waters (the total maximum daily load, or TMDL), and to devise alternative implementation plans to remedy the impairment.

Kentucky's draft list was developed within the Watershed Management Framework, which involves public participation. The draft list, along with a document containing a schedule for TMDL development, was released for public comment in March. Following receipt of comments, the document was sent to EPA and subsequently was approved. See the final document online at <http://water.nr.state.ky.us/303D/>

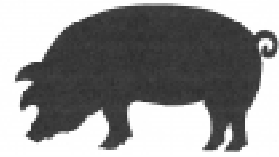
Clean Water Action Plan. The president's Clean Water Action Plan was released in February 1998 with the broad vision of watershed restoration and protection through cooperative approaches. State, federal, and local governments and interested citizens were asked to identify watersheds with the most critical water quality problems and work together to focus resources and implement effective strategies to solve these problems.

The Division of Water and the U.S. Department of Agriculture Natural Resources Conservation Service were the lead agencies in developing a Unified Watershed Assessment for Kentucky. The Kentucky Department of Fish and Wildlife Resources and the U.S. Fish and Wildlife Service were also asked to provide input on their priority watersheds. A draft of the proposed document was released for public comment between Aug. 1 and Sept. 11, 1998. Comments were summarized and suggestions were incorporated, where possible, into a final document that was submitted and approved.

See the final document at <http://water.nr.state.ky.us/dow/cwap.htm>

Report to Congress on Water Quality. Section 305(b) of the Clean Water Act requires each state to submit a report that evaluates the quality of its streams, rivers, and lakes. Kentucky's report was submitted as data in 1998, rather than in its usual narrative format. An executive summary has been prepared giving highlights of the data. It tells that, excluding the Ohio River, full support of uses occurred in 6,153 miles (67 percent), uses were not supported in 2,004 miles (21 percent), and partial use impairment was found in 1,072 miles (12 percent) of the assessed waters. The Ohio River Valley Sanitation Commission reported that none of the 664 miles of the Ohio River bordering Kentucky fully supported swimming or fish consumption uses.

See the executive summary of the report at <http://water.nr.state.ky.us/305b>



Swine permitting regulations

- July 25, 1997 - Gov. Paul E. Patton issued an executive order suspending the acceptance of permits for swine feeding operations until a balanced regulatory program could be developed.
- July 28 - Cabinet Secretary James Bickford established a team of cabinet employees to develop the regulation.
- Sept. 18 - The emergency regulation became effective. The cabinet then began the process of developing regulations.
- Nov. 25 - A public hearing to receive comments on the Notice of Intent to promulgate new regulations was conducted in Hopkinsville. Approximately 570 people attended and 70 provided oral comments.
- Dec. 15 - Response to comments and proposed permanent regulation were filed.
- Jan. 22, 1998 - Public hearings to receive comments on the proposed permanent regulation were conducted in Paducah and Bowling Green. A total of 308 people attended these hearings, and 53 people commented.
- Feb. 13 - Responses to 462 comments on the proposed regulation and an amended regulation were filed.
- March 11 - The Administrative Regulation Review Subcommittee attached a finding of deficiency to the proposed amended regulation.
- April 15 - The regulation expired at the close of the legislative session after efforts to negotiate acceptable legislation during the meeting of the General Assembly failed.
- April 17 - Emergency regulation 401 KAR 5:002E, Definitions, and 5:009E, Permits for Swine Feeding Operations, were filed.
- June 25 - A public hearing to receive comments on the Notice of Intent to promulgate new regulations was held in Frankfort. Of 102 people who attended, 52 provided comments.
- July 15 - Response to comments and proposed new regulations were filed. The Legislative Research Commission (LRC)

Tanks, tires & dump cleanups main issues for DWM

By Anya Armes Weber

Division of Waste Management

The Division of Waste Management continued its mission to protect health and the environment in 1998. Branches were involved, together and independently, in several key projects.

Enforcement Branch. Special efforts for the year were in open dumping, underground storage tank fee/ownership cases, tire cases and solid waste landfill closure cases. Focus was on the old landfill closure cases and old hazardous waste cases to get them back on track. Here are some details about the Enforcement Branch's work:

Cases Referred to Branch 381; Cases Closed 350; Demand Letters Issued 362; Agreed Orders Executed 48; Conferences Held with the Violator 54; Referrals to the Office of Legal Services 92; Complaints Filed by OLS 106; Supplemental Environmental Projects 4.

Penalties Assessed \$621,600; Penalties Collected \$132,000; Cost Recovery Assessed \$107,700; Cost Recovery Collected \$112,400.

Field Operations. Branch employees spent 1998 working with several other branches on underground storage tanks, open dumping, and the PRIDE program.

Underground storage tank inspections continued to be one of the most important priorities in 1998. There are more than 5,000 sites with active underground storage tanks in Kentucky. All of these tanks were required to be upgraded by Dec. 22, 1998, to meet standards that are intended to prevent releases or cease operating. The goal was to inspect every site by the deadline. Although inspectors were not able to reach every site before the deadline, the 1,736 inspections conducted in 1998 helped the division reach more than 85 percent of the sites.

The cabinet's open dump initiative that began in February 1997 also continued to be a high priority for DWM field offices. There were 598 open dumps investigated, and DWM issued 526 Notices of Violation to persons responsible for the dumping. As a result of these efforts, 250 of these sites were cleaned up. Although there were fewer sites cleaned

up in 1998 versus 1997 — 237 versus 250 — the percentage of sites that were cleaned up in response to NOV's was much higher. In 1997, only 31 percent of the sites were cleaned up after an NOV was issued, while in 1998 over 59 percent of sites were cleaned up after this action was taken.

In addition, field offices in Hazard, Frankfort, London and Morehead also provided valuable support and resources to the PRIDE program, led by U.S. Rep. Hal Rogers, R-Somerset, and Secretary James E. Bickford. DWM staff worked with county solid waste coordinators and other cabinet employees to clean 16 dumps in six counties (Estill, Floyd, Jessamine, Knox, Morgan and Whitley) and possibly prevented some illegal dumping in Letcher County by going door-to-door with the county to pick up tires and white goods.

As always, responding to complaints and releases to the environment continue to be a priority. During the year, inspectors investigated 641 complaints (not including open dumps) and 958 spills or releases to the environment.

Although the branch was not able to

perform as much formal compliance assistance in the form of seminars and workshops in 1998 as has been done in previous years, a compliance assistance manual for motor vehicle salvage facilities, more commonly known as junkyards, was drafted and will be distributed in 1999.

In addition to these activities, DWM inspectors conducted 612 inspections at sites handling hazardous waste, 90 inspections at sites handling PCB's (polychlorinated biphenyls) and 1,129 inspections at permitted solid waste facilities.

Hazardous Waste. The branch received significant funding from a U.S. Environmental Protection Agency grant, which provided \$1.69 million of the \$2.3 million program budget in 1998. These federal grant moneys authorize Kentucky to administer the state hazardous waste program in lieu of the federal program and reduce the cost of the state program for Kentucky taxpayers.

The state's commitment to maintaining an authorized state program ensures that the regulated hazardous waste community in Kentucky will have

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Division of Waste Management (502) 564-6716; FAX (502) 564-4049

<http://www.nr.state.ky.us/nrepc/dep/waste/dwmhome.htm>

The Division of Waste Management is dedicated to the protection of our environment while providing quality service to Kentuckians. Here are some of the division's responsibilities:

- Increase awareness and educate Kentuckians on waste management issues.
- Regulate solid and special waste facilities through permitting and registration programs. Provide annual training and certification for facility operators and managers.
- Promote development of markets for recovered materials and provide technical assistance to local recycling programs through the Kentucky Recycling and Marketing Assistance (KRMA) program.
- Regulate underground storage tank registrations, installations, closures and corrective actions.
- Approve each of the 120 counties' solid waste management plans and monitor progress.
- Regulate hazardous waste generators, transporters and recyclers, treatment, storage and disposal facilities.
- Oversee cleanup of state Superfund sites and monitor and maintain Kentucky sites cleaned up under the federal Superfund program.
- Regulate and oversee environmental compliance and restoration at federal facilities in Kentucky.



ENVIRONMENTAL EDUCATION

It's not just for kids!

Workshops help public understand waste guidelines

Through outreach programs and workshops, the Division of Waste Management helps both the regulated community and the general public learn about the guidelines that affect and protect their health and environment.

A team from the Division of Waste Management traveled across the state last fall, leading seminars on Kentucky's new waste tire management designed to provide better management of waste tires.

The Hazardous Waste Branch hosts sessions for hazardous waste generators on regulatory requirements for hazardous waste generators. The training is designed specifically for new employees who will be responsible for compliance with hazardous waste regulations.

The branch also offered a session in 1998 for those generators who plan to electronically file their 1998 Hazardous Waste Annual Reports. Filing electronically eliminates the need to manually enter the annual report data, saving substantial time for the data management staff.

Landfarm Facility Operator Certification provides training on landfarming operations in the state. The topics covered include special and solid wastes for landfarming, soil properties, site selection and closure. Landfill Operator/Manager Certification provides training on landfill operations and management. The topics covered include how to manage solid wastes and operational, safety, and health issues. Participants in each class must pass a test with a 70 percent score to be certified and are required to be recertified every five years. These classes are conducted yearly.



Web sites for small businesses with air quality questions

The Kentucky Small Business Stationary Source Technical and Environmental Compliance Assistance Program web site is <http://www.state.ky.us/agencies/nrepc/dep/smbizair>. This site provides information on the program and includes several success stories of clients who have participated.

The Kentucky Business Environmental Assistance Program web site is <http://gatton.gws.uky.edu/KentuckyBusiness/kbeap/kbeap.htm>. This site provides information about the technical assistance available free of charge to small business stationary sources - those with less than 100 employees. It also has a number of links to federal and state regulatory and information sites.

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Water workers attend classes

The Division of Water's Operator Certification Section is responsible for certifying drinking water treatment and distribution and wastewater system operators. As a result, the division offers a variety of certification review and continuing education training sessions which are open to system operators and anyone else interested in this issue. Information on the 1999 training sessions and procedures for registering can be found at <http://water/nr.state.ky.us/dow/trngcat.htm> or by contacting the Operator Certification Section at (502) 564-3410 to request a training catalog.



Training coordinator Sharon Watkins assists Carl Manning at Landfill Manager School at the Anderson County Technology Center in Lawrenceburg. Manning works at a transfer station in Marion County.
Photo by Anya Armes Weber

Drillers learn about a 'deep subject'

The Division of Water, through its Groundwater Branch, certifies water well and monitoring well drillers and provides training that is required for their certification.

The branch also conducts an annual workshop in cooperation with the Kentucky Groundwater Association at which drillers can obtain continuing education. In addition, the branch issues a quarterly newsletter to provide information about other available training opportunities and additional information that may be of interest to the drilling community. While the division does not conduct routine compliance inspections, it does inspect wells in response to complaints or inquiries.

Information about the program, training, general water well/monitoring well inquiries, or a Directory of Certified Drillers is available by contacting the Groundwater Branch at (502) 564-3410. Information is also available on the

Groundwater Branch web page at <http://water.nr.state.ky.us/dow/dwgr.htm>

Well diggers class observing use of hollow stem auger rig and demonstration of grouting techniques.
Division of Water photo

Georgetown Middle wins top environmental award



Left to right, Teachers Lori James, Billie Travis and Patty Gibian, with students Coy Zerhusen, Chris Travis, Elizabeth Tackett and Jenny James, accept the Secretary's Award from Natural Resources and Environmental Protection Cabinet Secretary James E. Bickford. Photo by Creative Services

Georgetown Middle School received the Secretary's Award for outstanding contributions to the protection and preservation of the Commonwealth's land, air and water resources.

Four teachers from Georgetown Middle School created a program called "A Creek Runs Through It." Every year, each student in grades 6-8 participates in two weeks of investigative activities focused on Elkhorn Creek. By making Elkhorn Creek a living classroom laboratory, the application of the science curriculum (physical, life and earth) is enhanced. Students participate in water testing, nature walks, and other environmental activities combined with archeological digs in this successful interdisciplinary project.

Parents, local businesses and government, and colleges also participate. All those involved gain an increased level of awareness about Elkhorn Creek, the community's greatest natural resource. Participating teachers are sharing their experiences with teachers in other schools, so similar units can be developed, and this project can be duplicated throughout the Commonwealth.

Poster contest winners honored at annual awards ceremony

Patty Quinn, a sixth grader at Christ the King Elementary, Lexington, was the cover winner of the Division of Energy's annual Calendar/Poster Contest.

Gov. Paul Patton presented Patty and 12 other poster winners with a congratulatory letter at the Capitol Rotunda on Nov. 20 during Kentucky Energy Awareness Week. The contest theme was "Energy. . . Above and Below," showing how energy can be found in many forms all around us.

Poster art by fourth-, fifth- and sixth-grade students from across the Commonwealth was selected to appear on the 1999 desk calendar and poster. For more information, contact the Kentucky Natural Resources Cabinet, Division of Energy, 663 Teton Trail, Frankfort, Ky. 40601, or telephone (502) 564-7192 or toll free at (800) 282-0868.

Winners, in addition to the cover winner, were:

FOURTH GRADE

Sunni England, Simpson Elem., Franklin, Simpson County; Kristen Geil, Christ the King Elem.; Vickie McGregor, St. Martha Elem., Louisville; and Meagan A. Peak,

Camden Station Elem., Crestwood, Oldham County.

FIFTH GRADE

Laura Henley, St. Martha Elem.; Rhea Ann Kaw, St. Julian Elem., Louisville; Branden Kelley, Minors Lane Elem., Jefferson County; and Laura Thompson,

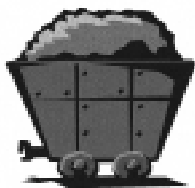
Hiseville Elem., Hiseville, Barren County.

SIXTH GRADE

Will Scott Bauer, Hiseville Elem.; J.J. Ravellette, Sedalia Elem., Sedalia, Graves County; Megan Pickerel, Eastern Elem., Glasgow, Barren County; and Kim Texter, Noe Middle, Louisville.



Left to right, front row, Patty Quinn, Vickie McGregor, Kristen Geil, Rhea Ann Kaw, Branden Kelley, and Sunni England; second row Kim Texter, Meagan A. Peak, Megan Pickerel, Laura Thompson, Will Scott Bauer, J.J. Ravellette, and Laura Henley. Creative Services photo



Geologically speaking

Kentucky coal -- an important natural resource

By Charles Oldham, PG

It takes approximately one pound of Kentucky coal to produce one kilowatt-hour of electricity. One kilowatt-hour of electricity is enough power to keep a 100-watt light bulb lit for ten hours.

Coal is a naturally occurring mineral resource composed of fixed carbon, volatile matter, water, and various impurities. Coal originated from plant debris that collected in the bottoms of ancient swamps. As time passed these deposits were covered by overlying sediments, that later turned to stone. The plant debris was compacted and most of the liquids and gases were squeezed out, leaving behind a layer of coal.

Coal is classified as either hard coal or soft coal. Hard coal is called "anthracite," and contains the least amount of moisture and the highest percentage of carbon.

Soft coal is divided into three major subdivisions--lignite or "brown coal," sub-bituminous, and bituminous. Of these three types of soft coal, bituminous contains the most carbon and has the lowest moisture content. Kentucky's coal reserves consist of bituminous coal.

Mining types vary with geography

Coal in Kentucky occurs in flat layers or seams. If the coal seam is relatively close to the surface, then the overlying earth or "overburden" is stripped away, the coal is removed and the overburden is put back. This type of mining is called "surface mining."

If the coal seam lies deep beneath the ground, and it is not economical to mine the coal by surface mining methods, then a shaft is dug and the coal bed is removed while leaving the surface in place. This type of mining is called "underground mining."

Occasionally a third type of mining is used called "auger mining." A cut is made along the face of the coal bed, creating a "bench" and "high-wall." The "high-wall" resembles a road cut, as seen along our highways. A strange looking machine called an "auger" is then used to mine the coal. As the term auger

implies, this machine is a boring tool, (closely resembling a carpenter's auger) that bores horizontally into the coal seam. As the auger advances into the coal seam, the cuttings are rotated back toward the machine onto the bench.

Mining east & west

Coal mining takes place in both Eastern and Western Kentucky. These two parts of the state vary in types of mining and in the amount of coal tonnage produced. For example, in 1996, a total of 544 operating mines in the state of Kentucky produced 157.7 million tons of clean coal. Of this total, 40,583,845 tons were produced in Western Kentucky, and 117,090,760 tons were produced in Eastern Kentucky. In 1996, 62.5 percent of this total tonnage mined was from underground operations.

Mining: a "moving" experience

Coal mining is essentially an earth-moving operation that involves the use of large, specialized earthmoving equipment. For example, one type of bulldozer used in larger surface mining operations, the D-11, is 15 feet high, 28 feet long, 22 feet wide, has a 770 horsepower engine and weighs 211,302 pounds. The blades are interchangeable and are 18 to 21 feet wide, with a capacity of up to 58 cubic

yards! The off-road trucks used in these operations have hauling capacities of up to 169 cubic yards. These trucks are over 20 feet high, 42 feet long, nearly 25 feet wide and weigh 323,709 pounds empty. The loaders utilized to fill these trucks have a maximum bucket capacity of about 25 cubic yards of rock.

With all these facts and figures in mind, let's calculate how many cubic yards of overburden were removed and handled to mine the 47,376,403 tons of surface coal in Eastern Kentucky in 1996.

First we will need to convert tons of coal to cubic yards. If a cubic yard of coal weighs 720 pounds and a ton of coal weighs 2,000 pounds, then a ton of coal will equal 2.8 yards. Therefore 47,376,403 tons equals 132,653,928 cubic yards. Assuming a 14:1 ratio between coal and overburden then 1,857,154,998 cubic yards of overburden would have to be handled at least once to mine the coal.

Using the largest truck, with a capacity of 169 cubic yards, 10,989,083 trucks would be necessary to move this overburden. Considering that these trucks are 42 feet in length, the traffic jam would be 87,413 miles long and encircle the earth three times, bumper to bumper!



Arbor Day is April 2

Gov. Paul E. Patton has proclaimed April 2 as Arbor Day in Kentucky. Arbor Day has been an important tradition in Kentucky for more than 100 years, and on this special day Kentuckians throughout the Commonwealth will have the opportunity to show their appreciation for one of our most valuable resources—our trees.

Schools, communities, and organizations are planning local planting ceremonies to encourage the stewardship of Kentucky's urban and woodland trees. These ceremonies will highlight the many social, environmental, and economical benefits that trees provide including reduced soil erosion, lower heating and cooling costs, increased property values, increased community pride, and jobs.

For further information or assistance in organizing an Arbor Day ceremony, contact the Division of Forestry at (502) 564-4496, or phone the ARBOR DAY HOTLINE toll free at 1-88-U-SET-TREE.

Waste Management

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convenient access to local regulators. It minimizes dual inspections, although EPA does conduct oversight inspections to confirm the quality of Kentucky's program. The combined state and federal budget funded inspections, enforcement, record reviews, permitting and corrective action activities.

More than 17 million tons of hazardous waste were generated in Kentucky in 1998, or more than four tons for each person in the state. This waste was produced primarily by 357 large quantity generators that made up 14 percent of the 2,600 hazardous waste generators registered in the state in 1998. In addition to hazardous waste generators, the hazardous waste program regulated 915 transporters, 235 recyclers and 115 treatment, storage and disposal facilities across the state. Certificates of Registration were issued to more than 1,500 generators, which allowed them to ship hazardous waste off-site for appropriate management. More than \$2.8 million was collected from hazardous waste assessments to fund the cleanup of abandoned sites across the state. Seminars conducted in November trained 90 individuals in basic hazardous waste requirements and electronic reporting.

The hazardous waste corrective action program is staffed by eight technical reviewers. In 1998, they provided technical oversight for more than 23 active investigations and conducted 10 formal cleanup evaluations at hazardous waste treatment, storage or disposal facilities. This group also conducted seven comprehensive field inspections of groundwater monitoring programs. The corrective action program coordinated the efforts of several facilities that implemented or expanded their interim measures to clean up serious contamination that needed immediate action to protect the public and the environment.

Progress was made on 13 permit applications for storage, treatment or disposal facilities across the state, including approval of modifications to existing permits, review and comment on pending permit applications and announcements made to the public that



Solid Waste Branch employees Debra Morgan, left, an administrative specialist principal, and George Gilbert, branch manager, lead a waste tire information session at Paducah Community College in October 1998. It was the first of six sessions for the regulated public explaining the waste tire law that took effect July 15. Mostly retailers attended the sessions.

Photo by Anya Armes Weber

tentative decisions to issue or deny a pending permit had been made. Five closure plans were approved and implemented at facilities that needed to safely end their storage, treatment or disposal activities, and 11 other closure plans were either under review or being implemented for additional facilities. One of these closing facilities will require long-term monitoring and maintenance under a post-closure permit because hazardous waste will remain disposed at the site after closure activities are complete. One comprehensive operating permit was issued to a storage facility in Louisville.

Expanded public participation activities were conducted for three controversial facilities that are seeking permits to store and treat hazardous waste. Activities included numerous public meetings, as well as consultation with facility representatives to ensure that the local communities had adequate access to information about proposed hazardous waste management. Expanded public participation activities are not required specifically by the regulations but are considered important by the Hazardous Waste Branch to encourage public involvement.

Resource Conservation and Local Assistance Branch. The RCLA Branch is responsible for working with Kentucky counties to implement solid waste management plans and provide technical assistance to local governments. During 1998, the RCLA Branch:

- Reviewed and approved 119 updated county solid waste management plans.
- Reviewed 120 annual reports for calendar year 1997 and compiled the data into a summary report.
- Conducted on-site and telephone meetings with all counties to monitor implementation of their 1998-2002 county

solid waste plans.

- Planned and conducted 11 Buy Recycled/Waste Reduction workshops across the state. Conducted 11 follow-up meetings with local focus groups. These workshops were jointly hosted by the Kentucky Pollution Prevention Center and solid waste coordinators.
- Planned and conducted a three-day Solid Waste Planning Workshop at Robinson Forest for all solid waste coordinators and county judge-executives.
- Assisted in the implementation of the new tire legislation, House Bill 636. Participated in training sessions for the general public.
- Contracted for the cleanup of eight abandoned tire sites that resulted in the removal of 244,688 passenger tire equivalents at a cost of \$398,352.
- Developed a Tire Amnesty Program. Conducted the first Tire Amnesty Program in the Gateway Area Development District and collected about 100,000 tires from residential and agricultural entities.
- Coordinated the America Recycles Day activities for the state. Cecil Roberts, a fourth-grade student at Tyner Elementary in Jackson County, was selected as youth prize winner of a family vacation package to Walt Disney World, courtesy of Disney and the Solid Waste Association of North America.
- Increased the Buy Recycled membership to 179, representing the purchasing power of 132,000 employees.
- Worked with the Transportation Cabinet to develop a recap tire pilot project.
- Recovered 3,230,951 pounds of office paper from more than 120 state office buildings in Frankfort. Receipts for the sale of the material totaled \$93,575.
- Trained 100 people in the "Waste: A

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Students learn about cleaning up the environment through poster contest



During the news conference, Gov. Paul Patton and Natural Resources and Environmental Protection Cabinet Secretary James E. Bickford, left, present the Commonwealth Cleanup Week logo. Photo by Steve Mitchell, Creative Services.

Student energy audit training application deadline

Enjoy beautiful Lake Cumberland surroundings while learning how to save money for your school.

In early April, the Kentucky Division of Energy (KDOE) will be sending invitations to the state's high schools to take part in its Students Weatherization/Audit Training (SWAT Jr.) program. SWAT Jr. allows one teacher and two students from each participating school to attend a three-day training session September 26-28, 1999, at the Kentucky Leadership Center near Jabez, Kentucky. Participants will learn how to conduct an energy audit.

Workshop participants return to their schools and organize a SWAT team. The team analyzes the school's facilities to determine how to reduce energy consumption, save money, and benefit the environment. The team then makes recommendations to school administrators. The SWAT Jr. program offers students an opportunity to participate in an interdisciplinary, real-world, problem-solving exercise.

The program is funded under a cooperative agreement between the KDOE and the University of Kentucky's DOE/EPSCoR program. The application deadline is April 30, 1999. For additional information or the complete application package, contact Greg Guess or Sheri Whisman at (800) 282-0868.

Students drawn to protecting the environment had a chance to showcase their artistic talents in the 1999 Commonwealth Cleanup Week poster contest. Gov. Paul Patton announced the contest at a news conference Jan. 7, inviting all first- through eighth-grade students to participate.

"If we get our children motivated to stop our parents from littering, we can begin to make headway," Patton said at the conference.

Patton was joined by Secretary James E. Bickford and House Speaker Jody Richards, D-Bowling Green, who sponsored the legislation calling for Commonwealth Cleanup Week. The 1998 General Assembly earmarked \$75,000 for the statewide effort to be scheduled the fourth week of each March. This year's event was slated for March 20-27.

Students competed in three grade categories: first and second, third through fifth, and sixth through eighth. Each student who submitted a poster received a color certificate of participation. School officials selected one winner in each grade category who received a T-shirt and whose work went to the county conservation district for further judging. County winners get a \$50 savings bond.

State finalists will be judged by a blue ribbon panel. The winners in each of the three grade categories will receive \$100 savings bonds and \$1,500 for their schools' environmental education programs. The winning artwork will be on display at the 1999 Governor's Conference on the Environment.

Several community activities, such as dump cleanups and recycling open houses, were also planned for Commonwealth Cleanup Week.

Cosponsors for the cleanup and contest are the U.S. Postal Service and Touchstone Energy.

Kentucky Works Earth Day

For the third consecutive year, agriculture, industry and government organizations are joining together to sponsor Kentucky Works Earth Day '99, a celebration of the environment. This Earth Day event highlights the working partnerships established in Kentucky to use our natural resources wisely and protect the environment.

The celebration will be held on Thursday, April 22, 1999, at the Kentucky Fair and Exposition Center, East Hall, Louisville, Ky.

Groups of students are invited to participate. For registration information, contact Rebeckah Freeman, Kentucky Farm Bureau Federation, (502) 495-7731.



Give us a little space

Last year Sue Stock's eighth-grade class at South Oldham Middle began the fight to save Kentucky wildlife close to home – in their own back yards! The students recorded observations for two weeks focusing on their backyard habitats. Then each student designed a brochure detailing an improved back yard at his or her home.

The illustration was drawn by student Dana Reaves.



Department for Natural Resources

Division of Energy

Energy programs benefit all Kentuckians

By Karen Landry
Division of Energy

Today, Kentucky's citizens enjoy low electric utility rates (average cost second only to Utah), and gasoline prices are among the lowest they've been in years. That's good news. However, energy efficiency and energy conservation are still important objectives for several reasons.

First, our use of natural resources to generate electricity and fuel our cars has an impact on the environment. Second, our country is heavily dependent on petroleum imports, leaving us vulnerable to the stability of other nations. Also, even with relatively low electricity rates, Kentucky's citizens and businesses spend a considerable portion of their budgets on energy costs.

The Division of Energy's mission is to develop and implement programs that address these and other issues tied to energy use. Division programs help to reduce energy costs, make Kentucky businesses more competitive, create jobs, and reduce harmful environmental effects. The division works directly with citizens, business and industry, nonprofit organizations, and other government agencies to deliver its programs.

The following is a highlight of the division's activities during 1998.

Special Projects. The U.S. Department of Energy awarded the division two grants for special projects. A \$100,000 Rebuild America grant will allow the division to work with several Kentucky communities in making their commercial, institutional, and multifamily residential buildings more energy efficient. The division will be working with the urban Louisville/Jefferson County area, and the rural communities of Berea, Hindman, and Jenkins. The Rebuild America program helps communities become sustainable.

A second \$50,000 grant will help the division establish a Kentucky Home Energy Rating System (KyHERS). A Home Energy Rating System is a voluntary program to rate the energy efficiency and estimate the annual energy costs of new and existing homes. The division will

establish a framework for KyHERS and will serve as a HERS provider for an accredited program.

Government Facilities Energy Efficiency Program. The division continued its work implementing the Energy Efficiency Program for Government Buildings, which was launched as a result of legislation passed in 1996. The division estimates that the program will help state government to reduce its annual energy costs by 25 percent, or \$13.25 million.

The division, along with the Finance and Administration Cabinet, was instrumental in preparing House Bill 639, which was passed by the 1998 General Assembly. The new law facilitates the use of energy savings performance contracting by state and local government agencies.

In November, the division sponsored a workshop on the principles of guaranteed energy savings performance contracting. This form of contracting is a viable way for governments to save energy and money by securing private sector financing for an energy-efficiency project with the guaranteed savings paying for the cost of the project. At the request of the Finance and Administration Cabinet, the division will be implementing the low-cost/no-cost program for state government.

Institutional Conservation Program (ICP). This program provides grants to schools, hospitals, and government

agencies to fund energy-saving measures in their buildings. During 1998, grants were awarded to 22 applicants for projects totaling \$1.2 million. This program has historically generated 25 percent energy savings for participating schools and hospitals.

Alternate Energy Program. This program promotes the use of cost-effective renewable energy technologies in the residential, commercial, and industrial sectors. Through a \$4,000 grant from TVA's Southeastern Regional Biomass Energy Program (SERBEP), Modern Horse Logging, LLC, Hardin County, installed a small boiler to produce steam and electricity for its facility. A \$15,000 SERBEP grant allowed the Louisville Outer Loop Landfill to recover landfill gas to be used for energy at a nearby General Electric facility.

Through grants from U.S. DOE, the division funded several alternative fuel vehicle projects. As a result of these grants, 10 vehicles were converted to Compressed Natural Gas (CNG) at Louisville's Standiford Field and two trucks to CNG for use by the city of Louisville. Public alternative vehicle fueling stations (ethanol) were installed, one each in Frankfort and at Mammoth Cave. Funding also helped support Kentucky's Clean Fuels Coalition.

Through a \$17,350 Alternate Energy Development Fund grant, Learning

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Division of Energy

(502) 564-7192 or toll-free (800) 282-0868; Fax (502) 564-7484

<http://www.nr.state.ky.us/nrepc/dnr/energy/dnrdoe.html>

- Compiles and analyzes data on energy supply, demand, conservation, and related subjects.
- Serves as the lead agency for energy-shortage management at the state Emergency Operations Center (EOC).
- Conducts energy conservation programs for all sectors of Kentucky's economy.
- Promotes cost-effective applications of alternative energy resources and technologies.
- Administers state-level energy programs funded through initiatives of the federal government.
- Makes grants available for energy conservation and alternative energy development projects.

Forestry is changing in Kentucky

By Gwen Holt
Division of Forestry

1998 was a year of changes for the Division of Forestry.

The Forest Conservation Act. The 1998 Kentucky General Assembly passed the Forest Conservation Act. The act promotes long-term timber production, economic opportunities with forest industries and tourism, and healthy, high quality forests.

Passage of the Forest Conservation Act made it necessary for the division to reorganize. The Department for Natural Resources and the division created an implementation plan, and workgroups were established to create guidelines, procedures, protocols, and training. Many of the 246 employees in the division must now be trained in timber harvesting best management practices (BMPs). They must also learn how to inspect logging operations.

Beginning July 15, 2000, the act requires loggers and operators to have a master logger on site and in charge of commercial timber harvests, to use appropriate BMPs during timber harvests, and to correct damage to land and water. A master logger is someone who has completed the master logger training provided by the University of Kentucky, Kentucky Forest Industries Association, and the division.

The act also requires the division to maintain an inventory of Kentucky's forests and produce a biennial report to reflect timber growth and removal, commercial species composition, timber quality, market information, forest health, and industry activity. Ten positions were created and filled to accomplish this task. The inventory crews have been undergoing intensive training and expect to begin the inventory in early spring.

Development of educational programs to increase public awareness of the importance of Kentucky's forests was also mandated by the act. The division has established additional positions to accomplish this requirement. A Forest Conservation Act Fact Sheet was developed, exhibits were displayed at numerous events, and articles were printed in several publications. Additional educational

activities are being planned for 1999.

Forest Stewardship. The division's award-winning Forest Stewardship Program continued to grow in 1998. Kentucky ranked first among the southern states and third nationally in forest stewardship assistance. In 1998, stewardship plans were developed for 1,619 private forestland owners involving over 167,618 acres. Nearly 20 percent of Kentucky's privately owned forestland is now being managed through a stewardship plan.

Urban and Community Forestry. The Urban and Community Forestry Assistance Program awarded more than \$161,000 in grants from funds provided by the U.S. Forest Service. This program also cosponsored the Fourth Annual Kentucky Urban and Community Forestry Conference in Lexington. The Urban and Community Forestry Assistance Program also administers the Tree City USA Program. The Tree City USA Program recognizes communities that demonstrate a strong commitment to the management of their urban forests.

Arbor Day (the first Friday in April) promotions resulted in more than 478,000 tree plantings throughout the Commonwealth. County judge-executives in 111 counties joined with Gov. Paul E. Patton in issuing proclamations designating Arbor Day in their communities. First Lady Judi Patton participated in the state ceremonial planting at Berry Hill in Frankfort.

Timber Harvesting. Forest products are a \$2.7 billion industry in Kentucky with continued growth anticipated. This growth was one of the factors that led to the development of the Forest Conserva-

tion Act. Kentucky ranks in the top four nationally in hardwood production.

State Forests. The division administers 31,340 acres of state forests to provide productive models of forest stewardship. The division will use these forests to train division staff in implementing BMPs in timber operations required under the Forest Conservation Act.

The division acquired 437.8 acres of forestland through the Heritage Land Conservation Fund. An additional 703 acres designated as the Green River State Forest were acquired through an inter-agency deed from the Department of Finance. Negotiations are ongoing for an additional 5,855 acres. The state forests are open to the public for recreational and hunting activities.

Nurseries. The division's two nurseries raised and distributed over five million seedlings in 1998. The nurseries developed a new system for delivering seedlings. Seedlings are now shipped directly to a purchaser's address via UPS. This change will provide greater efficiency in distributing seedlings to purchasers.

Wildfire. Wildfire continued to be a significant threat to Kentucky's forests. In 1998, division personnel suppressed more than 1,100 forest fires that damaged more than 28,224 acres. The drought-like conditions last summer and fall created an increase in fire incidents. Wildfire suppression and prevention are top priorities of the division. More than 40 division firefighters were dispatched to Florida and Texas during their forest fire emergencies last summer.

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Division of Forestry

(502) 564-4496; FAX (502) 564-6553

<http://www.state.ky.us/agencies/nrepc/dnr/forestry/dnrdof.html>

Mission: To protect and enhance the forest resources through a public informed of the environmental and economic importance of these resources.

- Promote the sustainability of Kentucky's forest ecosystems.
- Improve, maintain, and protect the health and condition of Kentucky's forest resources.
- Promote the most efficient use of forest resources.
- Provide educational opportunities to increase public appreciation, awareness, and knowledge of Kentucky's forests.

Agency assists local conservation districts

The Division of Conservation was created by the 1946 General Assembly to develop, administer and implement a sound soil and water conservation program in each of Kentucky's 121 local conservation districts.

The local conservation district assists landowners and land users in solving soil and water resource problems; sets priorities for conservation work to be accomplished; and coordinates the federal, state and local resources used to conduct conservation programs. Each local district is governed by a seven-member board of supervisors elected by the registered voters within that district.

The importance of proper soil and water use and management requires an integrated network of programs to provide financial, promotional, educational and administrative assistance to Kentucky's conservation districts and landowners. During 1998, the division provided assistance in several areas.

Training. Phase II of the Sustainable Agriculture Research and Education (SARE) Leadership Workshop was held in November 1998, titled "Kentucky Sustainable Leadership in Partnership." This event brought together 165 leaders from conservation districts and Agriculture Extension Advancement Councils. During the workshop, presentations from selected counties showcased training experienced at the local level on agriculture water quality. Also those who attended were recognized for their success in implementing agriculture water quality plans.

On the first day of this two-day workshop, there was a one-day compressed workshop for those who could not attend the workshops held during Phase I. Two-hundred fifty-nine leaders participated in the first phase which was held in 1997.

This was a joint project between the division and the University of Kentucky, which was awarded a grant in the amount of \$86,280. The grant was awarded by the southern region of SARE. The project, entitled "Grass-Roots Empowerment in Kentucky's Local Conservation Districts: Leadership Training on

Division of Conservation (502) 564-3080; FAX (502) 564-9195

<http://www.state.ky.us/agencies/nrepc/dnr/conserve/doc2.htm>

- Provides budgeting, educational, scientific, mapping and other assistance to local conservation districts.
- Provides loans to conservation districts for heavy earthmoving and specialized equipment for conservation work.
- Provides for organization and certification of agriculture districts to protect private agricultural lands.
- Provides assistance in the organization and administration of Watershed Conservancy Districts.
- Provides financial assistance to individuals through the Cost Share Program to implement best management practices (BMPs) on farms or in forest operations to improve water quality.
- Provides assistance in the administration of the Kentucky Agriculture Water Quality Act of 1994. This law strengthens agriculture producers' access to technical and financial assistance to implement the BMPs contained in the Kentucky Agriculture Water Quality Plan.
- Provides direct funding to conservation districts for operating district offices, hiring administrative, clerical and technical personnel, local water quality and educational projects, and buying equipment necessary to develop and implement conservation programs.

Sustainable Land and Water Quality Management Practices," provided leadership training in the areas of roles and responsibilities of conservation district supervisors and Agricultural Advancement Council members and of land and water quality management resources.

Financial Assistance. Direct Aid to the conservation districts totaled \$1,150,000 for 1997. Direct Aid is used to keep 24 conservation district offices open to allow more administrative secretary office time, to allow the hiring of technical staff and to fund special water quality projects.

During 1998, the Equipment Revolving Fund made 30 loans for more than \$1.1 million to purchase specialized conservation equipment such as no-till drills, earthmoving and animal waste pumping equipment used for the application of conservation and best management practices (BMPs).

Conservation districts have been sponsoring outstanding nonpoint source pollution projects and hiring water quality

specialists through the Nonpoint Source Pollution 319 Grant Program. This federal program helps carry out various aspects of the state nonpoint source pollution program that addresses agriculture issues. Conservation districts received \$161,000 in funding during federal fiscal year '97. The counties involved were Calloway, Casey, Fleming, Franklin, Scott, Warren and Webster.

The Soil Erosion and Water Quality Cost Share Program was created to help agricultural operations protect the soil and water resources. During the 1998 sign-up period, the division received 876 applications through the conservation districts requesting \$6.8 million for cost share projects. The Soil and Water Conservation Commission approved 333 applications in 60 counties at a cost of \$2,159,115.56. After four years Cost Share Program requests have been received from 118 counties with funding being approved in 101 counties. Priority was given to animal waste related projects

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Helping communities clean up illegal dumps, improve water quality

The Kentucky River Authority was established in 1986 by the General Assembly to take title to Kentucky River Locks and Dams 5-14. Following the 1988 drought, the authority's mission was expanded to enhance and improve water quality and supply through watershed management. Its mission is funded through fees collected from facilities that withdraw water from the Kentucky River Basin.

Water Supply.

The Circuit Rider Program, a cooperative effort between the KRA and the Kentucky Rural Water Association (KRWA), provides assistance to water treatment utilities

throughout the basin by providing systems evaluation, on-site training, and follow-up technical assistance. In the past year, KRWA has provided on-site technical assistance to 51 water systems within the basin.

Locks 5, 6, 7, 8 and 10 were open for recreational boating last year from May to September. Midway through the boating season, KRA contracted with Aquarius Marina to dredge Locks 5-10. Each year KRA lockmasters place buoys denoting dams and restricted areas above and below Locks 5-14 and paint safety signage on lock walls and abutments. The lockmasters also completed FEMA-funded repair work for lock damages incurred from the 1997 flood. They also performed release valve tests at Locks 11, 12, 13 and 14 for water supply purposes. Their duties also include upkeep of lock and dam properties.

The Zebra mussel (*Dreissena polymorpha*) is a newcomer to the Kentucky River Basin. A relatively small mussel, adults measure about 1.5 inches in diameter. They have the ability to colonize at extremely high rates and can obstruct water flow at intakes. The KRA's monitoring program provides information to help utilities maintain their equipment along the mainstem. During the mussels'

active period of growth and reproduction, monthly samples are taken at nine different intake sites. From this data a monthly report correlating location, water temperature and number of specimens is distributed to the areas' utilities. Spring 1999 will be the program's third year of reporting. If similar monitoring efforts in North America are any indication of the

granted \$328,000 to the Letcher County Water and Sewer District for cluster systems.

The Kentucky River Basin Watershed Watch is a basin-wide organization of volunteers dedicated to protecting the rivers, streams, lakes and wetlands in the Kentucky River watershed. The Kentucky River Authority has assisted in training

more than 180 Water Watch volunteers in water quality sampling methods. These individuals, with backgrounds ranging from shoreline property owners to environmental engineers, have performed stream habitat assessments and collected water quality samples for characteriza-



Before & After: An illegal dump on Bethel Church Rd. in Breathitt Co. (left) and the site after cleanup was performed (right). Photos by KRA.

future of the distribution of this organism, it is anticipated that higher species counts will be observed over a much larger area of the Kentucky River Basin.

Water Quality. The KRA has worked with Kentucky River Area Development District (KRADD) and Mountain Association for Community Economic Development (MACED) on the North Fork Clean Water Project to help fund individual wastewater treatment systems, plan for large and small collection systems and help support the creation of county-wide water districts. To date, the North Fork Clean Water Project has installed 36 on-site wastewater treatment systems, ten alternative systems, five peat systems, four constructed wetlands and one trickle irrigation system. The project also provides educational information to schools and community organizations. In addition to the KRA's efforts, PRIDE

tion of streams in relation to agriculture-urban runoff and seasonally low flow conditions. The results from these investigations are regularly reviewed by KRA staff and submitted to the Kentucky Division of Water.

The 1998 River Sweep was scheduled for June, but due to the river conditions, most of the Kentucky River Basin counties had to postpone. Throughout the basin, 22 counties participated in the sweep and had a total of 600 volunteers. Volunteers collected over 70 tons of garbage from the river and its tributaries. The authority is a partner with the Ohio River Valley Water Sanitation Commission along with other states and organizations. The 1999 River Sweep will be held on Saturday, June 19. To participate, please contact Sue Ann Elliston at (502) 564-2866.

Continued on back cover

Kentucky River Authority

(502) 564-2866; FAX (502) 564-2681

<http://www.nr.state.ky.us/nrepc/kra/page1.htm>

- Oversees maintenance and repair of Locks and Dams 5-14 for water supply.
- Develops recreational areas.
- Develops drought response plan.
- Develops a plan to protect and use groundwater.
- Coordinates programs with other agencies on the watershed management plan.

Conservation

Continued from Page 16

and agricultural district participants where water quality problems have been identified. Included in the approval were nine grants for conservation districts to help develop and implement community-wide waste pick-up or tire recycling programs.

Cost share funding was through the Kentucky Department of Agriculture from an increase in the pesticide products registration fee and the 1996 General Fund. This program helps producers engaged in agricultural or silvicultural operations better address nonpoint source pollution problems. The BMPs approved for cost share included reduced animal waste nutrients, the loss of topsoil, and reduced sediment and other nonpoint source pollutants in Kentucky's streams, rivers, lakes and groundwater supplies.

Field Services. The 11 field representatives help conservation districts develop and implement conservation programs. Among their many responsibilities are operation of district programs such as providing conservation education and information, financial reporting and budgeting, assisting state and federal conservation programs at the local level, and providing important communication links between the local district, cooperating agencies and the division.

Technical Services. The division's soil scientist staff through their mapping efforts help accelerate the Cooperative Soil Survey Mapping Program in Kentucky and provide automated soil survey information for use in geographic information systems.

During 1998, 10,000 acres were mapped in McCreary and Adair counties, and preliminary field work was started for the Caldwell County update. Other field activities included evaluating sites for housing, determining suitable locations for ponds and wetlands, and gathering saturated hydraulic conductivity (KSAT) data on various soils throughout the state. By using an advanced field instrument known as the Amoozemeter, soil scientists have been able to measure the ease of water movement in soil more accurately.

The soil scientist staff also provided assistance in supplying soil information for use in geographic information systems and producing digital soil surveys.

Kentucky now has 17 digital soil surveys which meet Soil Survey Geographic (SSURGO) database standards. To view a status map of Kentucky's digital surveys and download SSURGO data, visit the Internet address at <http://www.members.iglou.com/agburns/soilstatmap.htm>

In addition the technical staff provided prime farmland and soil capability information to the Department of Agriculture for processing 27 new applications in the Purchase of Agriculture Conservation Easement (PACE) program.

Agricultural District Law. The law allows landowners with land in agricultural use to petition their local conservation districts to create an agricultural district. Administered by the division, this law protects Kentucky's best agricultural land for the production of food and fiber and prevents its conversion to nonagricultural uses.

Last year 31 landowners petitioned for the formation of five new agricultural districts on 4,689 acres of land. Today there are 254 certified agricultural districts on 271,656.54 acres. A total of 2,249 landowners participate in 54 counties across Kentucky.

The Kentucky Agricultural Water Quality Plan. The plan was developed to comply with the Agriculture Water Quality Act (KRS 224.71-100 through 140) passed by the 1994 Legislature. Its goal is to protect surface water and groundwater resources from pollution as a result of agriculture and silviculture activities. The statewide plan will serve as a guide to individual producers as they develop individual water quality plans. Producers have until October 2001 to fully develop and implement their individual agriculture water quality plan, with one exception that relates to activities along or in streams or other water bodies. Best management practices for these activities must be implemented now as they are also regulated by the federal Clean Water Act.

Land users will select applicable BMPs from the Kentucky Agriculture Water Quality Plan to be included in their individual plans and put those practices in place. To help land users in the preparation of their individual plans, the Producer's Workbook was made available through the local conservation districts. This workbook contains a series of questions and is structured as a self-

assessment process.

Watershed Conservancy Districts.

This program provides flood protection for Kentucky's rural land, while supplying water and recreation areas for numerous Kentucky communities and industries.

Education Programs. In 1998, the division was an integral part of a new partnership called Kentucky Project Food, Land and People. This partnership is made of representatives from agricultural, environmental, educational and natural resource groups.

The goal of National Project Food, Land and People is to provide educators with high quality, balanced, and easily integrated classroom materials that deal with the complexity and interdependence of natural resources and people.

Planning got under way in 1998 for the first Kentucky Envirothon, a problem-solving nature resource competition for high school students. Conservation districts, with the help of cooperating agencies, educators and interested people, are helping to organize the first Envirothon competition in Kentucky for the spring of 1999.

Teams of five high school students are tested on their knowledge of Kentucky's natural resources—soils, forestry, wildlife, water and a current environmental issue. The event is competitive, but education is the bottom line. The winner of the state competition will represent Kentucky in the national contest at Humboldt University in Acata, Calif., in August 1999.

The Conservation Writing (essay) Contest, now in its 55th year, is for students in grades six through twelve. The Jim Claypool Conservation Art (poster) Contest, named for the late director of the Kentucky Division of Conservation, is for students in the first through fifth grade. Four themes--Water Quality, Soil Conservation, Forestry, and Fish and Wildlife--rotate every four years with more than 110,000 students participating each year.

The Kentucky Forest Leadership Program is a week-long program for high school students entering their junior or senior years that gives them an opportunity to investigate careers in forestry and

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Energy

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Pursuits Inc., a non-profit education organization based in Louisville, installed passive solar and photovoltaic systems at an environmental education resource center in Metcalfe County.

Greenhouse Gas Study. The division released a report on the second phase of a two-part study of greenhouse gases in Kentucky. The report, "Climate Change Mitigation Strategies for Kentucky—Policy Options for Controlling Greenhouse Gas Emissions through the Year 2020," shows the anticipated economic and environmental effects of several greenhouse gas mitigation strategies. The division has published a two-page fact sheet that summarizes the results of both phases of the greenhouse gas study.

Education & Awareness. The division strives to meet the needs of all Kentuckians through its education and awareness program by helping them make informed choices about their energy use. The division develops and distributes fact

sheets, brochures, videos, and other materials covering a range of energy efficiency and energy conservation topics. Activities include visits to schools, community groups, and environmental education functions.

The division sponsors two annual events, Student Weatherization and Audit Training (SWAT Jr.) and the Poster/Calendar Contest, to encourage energy awareness and conservation. SWAT Jr., gives Kentucky high school teachers and students a working knowledge of efficient energy use in their own school buildings (See article on Page 13).

The theme of the 1998 Poster/Calendar Contest was "Energy. . . Above and Below." The 13 fourth-, fifth-, and sixth-grade winning students from across the state were honored during a ceremony at the Capitol Rotunda during Energy Awareness Week in November. Each year, the division publishes a calendar depicting the winning artwork. (See article on Page 10.)

Other Division Activities. Also during 1998, the division began working

with the Y2K Interagency Working Group to address issues arising from the Year 2000 computer bug. It also intervened before the Public Service Commission on the Performance-based Rate Making proposal by Louisville Gas & Electric/Kentucky Utilities.

The division has committee membership with the University of Kentucky's DOE/EPSCorR (Experimental Program to Stimulate Competitive Research) program. It participates as a member of the National Association of State Energy Officials, an organization that studies energy issues and recommends energy policy at the national level. The division also cosponsors the Kentucky affiliate of the National Energy Education Development Project (NEED), which is a non-profit organization dedicated to the development of energy education and leadership skills. It participates on the Electricity Restructuring Task Force and works with U.S. DOE to publish *Conservation Update*, a newsletter with nationwide distribution that highlights programs of the state energy offices.

Top ten list *Continued from Page 1*

Management Practices Board have been received and appointments are scheduled to be made later this year.

5) Remining/Remediation. Remediation of pre-surface mining law sites is a relatively new cabinet initiative in which an area is remined and reclaimed upon completion. Market conditions must be favorable for a company to remine the site, but under this scenario, abandoned mine sites are reclaimed, such as the East Diamond Tipple Complex near Madisonville, currently underway. Remediation is also desired for pre-law sites where remining is not feasible. The cabinet has identified sites across the state and is utilizing money from the Abandoned Mine Lands Fund to pay for the remediation of these sites. An example is Ketchup Lake near Madisonville, a 240-acre site costing \$4 million, which is underway.

6) Brownfields. Brownfields are former

industrial sites with varying forms and levels of pollution, often found in cities across the state. Remediation of these sites and the location of new industries to these sites are the goals of this initiative. The city of Louisville has worked with the cabinet on a successful brownfields project and has other projects underway.

7) EMPOWER Kentucky. Progress continues to be made to implement electronic permitting in the Department for Surface Mining Reclamation and Enforcement. Some portions of permit applications are now being received and reviewed electronically, which is intended to decrease the amount of time for processing permits. Electronic permitting is beginning to be implemented in the Department for Environmental Protection.

8) Simplification of Regulations. An item on the previous top ten list, this involves the removal of technical language from cabinet regulations to make

them more easily understood by the regulated community. The cabinet has established an internal protocol to achieve progress in reducing the complexity of regulations.

9) Recycling. The cabinet will be attempting to increase the awareness of the importance of recycling and will encourage recycling efforts at state offices, schools, and city and county government offices.

10) Revise the Notice of Violation Process. The cabinet has been reviewing the process for the resolution of enforcement action following the issuance of a Notice of Violation. A Skunk Works team has reviewed this problem and made recommendations designed to decrease the amount of time for enforcement to be completed. One of the keys to improving this area will be the implementation of a successful tracking system within the Department for Environmental Protection.

Agency protects natural areas, biodiversity

The Kentucky State Nature Preserves Commission (KSNPC), now in its 23rd year, is led by five commissioners appointed by the governor. KSNPC is responsible for inventorying the state for high-quality natural areas and protecting the best remaining examples in a state nature preserve system.

1998 Highlights

- Donald S. Dott Jr., was appointed as the new director to the commission in August. Prior to his appointment, Dott worked for the cabinet for 13 years. Dott replaced Robert McCance. Dr. Eunice L. Johnson, Booneville, was appointed as a commission member in November, and Clara Wheatley became chairperson in December replacing Judith McCandless.
- Sixty acres of land purchased in Lewis County will become Crooked Creek Barrens State Nature Preserve, Kentucky's 38th state nature preserve. The site harbors a limestone barrens and contains state-listed plants such as Slender blazing star (*Liatris cylindracea*) and Indian paintbrush (*Castilleja coccinea*). During an inspection of this property, KSNPC Preserves Manager Dave Skinner found Ear-leaf foxglove (*Agalinis auriculata*), the first occurrence documented in Kentucky.
- A conservation plan for the upper Green River was prepared jointly with the Kentucky Chapter of The Nature Conservancy. The river segment from Green River Lake Dam downstream to the Nolin River is one of the nation's top four streams for the conservation of fishes and mussels. It includes the incomparable Mammoth Cave National Park.
- KSNPC submitted a report to the legislature entitled "Kentucky's Rare and Native Plants – Status and Trends" that included draft regulations to implement the Kentucky Rare Plant Recognition Act. When finalized, this will be Kentucky's first listing of state-designated rare plants.
- KSNPC acquired 497 acres of land at four sites and dedicated an additional 14 acres owned by the Department of Parks. Almost all these additions were made possible by funding from the Kentucky Heritage Land Conservation Fund. Since 1976, the KSNPC has acquired or has dedicated into the state nature preserves system a total of 14,226 acres, protecting important ecological communities and habitat for rare species throughout the state. It presently owns and/or manages 37 state nature preserves and two state natural areas.
- Biologists Aissa Feldmann and Martina Hines found Grass pink (*Calopogon tuberosus*), a rare orchid, now known to exist only in two locations in Kentucky. This orchid grows at the edge of a bog covered with cinnamon and royal ferns and sphagnum mosses. Later visits to the same site also revealed one of the largest known populations in Kentucky of the White fringeless orchid (*Platanthera integrilabia*), a globally rare plant, and the Yellow-fringed orchid (*Platanthera cristata*), a state rare species.
- Julian Campbell of the Kentucky Chapter of The Nature Conservancy received KSNPC's third annual Biodiversity Award.
- New populations for both Short's goldenrod (*Solidago shortii*), and White-haired goldenrod (*Solidago albopilosa*), both Kentucky endemics, were found. New information for protection strategies and restoration of their habitat has been developed. The agency's survey of Ohio River gravel bars this year was not so rewarding. Because of severe impacts from hydrologic changes and land use, the commission concluded that



Grass pink orchid (*Calopogon tuberosus*). Photo courtesy of John MacGregor

Stipuled scurfpea (*Orbexilum stipulatum*), a plant species that has not been seen in 100 years, is likely extinct.

- The Kentucky Natural Areas Inventory completed three new county inventories in Breckinridge, Grayson and Meade counties. A total of 160 sites were investigated for natural area quality with 21 sites identified as significant or notable.
- Ecological community classification for Kentucky was a priority for the commission ecology team in 1998. A major effort was made to bring the state classification in line with the new national classification being developed by The Nature Conservancy.
- The Stewardship Program completed five prescribed burns on four preserves totaling 30 acres during the spring and fall burn seasons. The burn objectives were to reduce the spread of woody species into the glades and barrens and to enhance

Continued to Page 22

Kentucky State Nature Preserves Commission

(502) 573-2886; FAX (502) 573-2355

<http://www.nr.state.ky.us/nrepc/dnr/ksnpc/index.htm>

- Conducts an ongoing inventory in Kentucky for state significant natural areas and rare species.
- Protects the state's best natural areas by acquiring and maintaining a statewide nature preserve system.
- Serves government agencies, organizations, consultants and others with a biological database and contracted inventory efforts.
- Educates Kentuckians as to the value of nature preserves and biodiversity conservation.

Harry 'Bo' Hoe is honored by small business panel

**By Rose Marie Wilmoth
Air Rep. for Small Business**

Harry 'Bo' Hoe, outgoing chairman of the Small Business Stationary Source Compliance Advisory Panel was presented with a "Governor's Certificate of Recognition" in November by panel member Jon Trout.

Hoe was honored for his service as panel chairman during 1998 and vice chairman during 1997 and 1996. Hoe is a charter member of the advisory panel.

Hoe is vice president of Jr. R. Hoe & Sons, a family-owned foundry in Middlesboro that has been in the Hoe family for four generations.

During a 1995 interview, Hoe said he agreed to volunteer his time with the panel because, "The concept of a group involved in planning ways to help small businesses deal with the Clean Air Act is both positive and exciting."

During the past four years, Hoe has emphasized the value to small business stationary sources of technical assistance like that provided by the Kentucky Business Environmental Assistance Program (KBEAP). He has supported increased funding for KBEAP and has asked the cabinet to consider establishing a multi-media technical assistance program for small businesses. Accomplishments during his year as chairman are listed as follows:

- In 1998, the KBEAP reached approximately 2,400 small businesses using a variety of outreach methods. These methods included a telephone hotline, onsite visits, workshops, a home page on the Internet, teleconferences and mailings.
- The air quality representative for small business prepared 14 publications reaching an audience of approximately 320,000.

Major accomplishments included:

- Enactment of legislation to add two additional small business representatives to the panel.
- Presentation of the first Small Business Air Quality Stewardship Awards.
- Increased efforts by the Division for Air Quality to notify businesses subject to new regulations of KBEAP assistance.
- A cooperative effort led by KBEAP including government and business organizations as partners in presenting Risk Management Plan Seminars in six locations.
- Publication of "Kentucky Small Businesses Volunteer Success Stories About The Kentucky Business Environmental Assistance Program."

By comparison, the 1995 EPA



After serving as vice chairman in 1996 and 1997, Harry 'Bo' Hoe was elected chairman for 1998 at the Nov. 10, 1997, Advisory Panel meeting.

Photo provided by Rose Marie Wilmoth

Annual Report, which was the first year for the program, identified a variety of outreach tools offered 95 times by the KBEAP to reach small businesses and a circulation of 14,650 for the air quality representative column.

According to the 1995 report, "The program (KBEAP) has resulted in submission of better quality permit applications and regulatory information to the Division for Air Quality. This has led to a shorter review time and improved the relationship between the division and small businesses. Small businesses have an increased awareness of the division's role in environmental regulation due to the information provided by KBEAP."

Swine permitting regulations

Continued from Page 7

did not accept the proposed regulations because of minor format deficiencies.

- Aug. 7 - Proposed regulations were accepted by LRC.
- Sept. 21 - A public hearing to receive comments on the proposed regulations was conducted at Lake Barkley State Resort Park. A total of 93 people attended and 27 provided comments.
- Oct. 14 - Response to 263 comments on the proposed regulation and an amended regulation were filed with LRC.

• Nov. 10 - The Administrative Regulation Review Subcommittee attached a finding of deficiency to 402 KAR 5:009. However, 401 KAR 5:002, Definitions for terms used in Chapter 5 of 401 KAR was passed.

• Nov. 18 - Interim Committee on Agriculture and Natural Resources attached a finding of deficiency to 401 KAR 5:009, but passed 401 KAR 5:002.

• In accordance with KRS 13A, Gov. Patton put 401 KAR 5:009 into effect

before the expiration of the Emergency Regulations on Nov. 27, notwithstanding the finding of deficiency by the legislative committees. The regulation can stay in effect until the adjournment of the 2000 regular session of the General Assembly. See the regulations at <http://www.lrc.state.ky.us/kar/401/005/002.htm> and <http://www.lrc.state.ky.us/kar/401/005/009.htm>

Waste Management

Continued from Page 12

Hidden Resource" curriculum. These people are now certified to train teachers in their local schools.

- Worked on numerous efforts as part of the cabinet's Initiative to Stop Illegal Dumping.
- Participated in the Eastern Kentucky PRIDE program.
- Participated in planning efforts for Commonwealth Cleanup Week.

In 1999, RCLA's agenda items include the following:

- Conduct the Tire Amnesty Program in 36 counties.
- Develop a new contract for the sale of Paper Recycling Program. Retrain state employees participating in the paper recycling program.
- Meet with the 68 new county judge-executives and their fiscal courts to educate them about solid waste management.
- Review and approve all 1998 county annual reports and compile data.
- Promote market development for recovered materials generated in the state.
- Participate in Commonwealth Cleanup Week on March 20-27, 1999.
- Continue to participate in PRIDE efforts.

Solid Waste. The Solid Waste Branch reviews applications and issues permits for solid waste landfills and sludge landfarming areas. In 1998, the branch accomplished the following:

- Approved 130 permit applications; approved 74 liner and cap construction reports.
- Obtained an agreement from Triple M Landfarms to stop composting raw WWTP (wastewater treatment plant) sludge from Nashville.
- Obtained a Secretary's Order to stop Hedges Excavating from selling improperly composted human waste to the public, followed by an Agreed Judgment in Circuit Court for improved environmental protection features at the site in Oldham County.
- Registered 27 tire accumulation, transportation and processing facilities under House Bill 636, and conducted six waste tire training sessions on the new law.
- Began participation in the Empower Kentucky process.

- Began a spreadsheet for statewide groundwater monitoring results and closure status.

- Delegated certain operational minor modifications to the regional offices for quicker and better responses.

Superfund Branch. The Superfund Program continues to address the cleanup of petroleum and hazardous substances. This task is being performed by overseeing companies or individuals who have taken responsibility for cleaning up contamination found on their properties. In cases where a responsible party can not be found or is unable to perform the necessary measures, the branch may take a direct role in cleaning up a site and utilizes the state Hazardous Waste Management Fund to investigate and clean up abandoned sites.

During 1998, the branch received a total of 1,690 reports of releases. The State Superfund and Petroleum Cleanup Sections closed 1,136 of those incidents. The Federal Superfund Section continued to provide technical support to the Environmental Protection Agency at National Priority List Sites. This included technical reviews, construction oversights, environmental samplings and operation and maintenance activities. The section conducted site assessments, including those related to brownfields to support the EPA preresidential program.

Superfund's goal for 1999 is to assume a more active role in addressing the environmental concerns, conducting site assessments related to brownfields initiative and also, contact as many Kentucky counties, cities and towns as possible to offer assistance in preparing grant applications for the upcoming National Brownfields Assessment Demonstration Pilot grants, which the EPA is now accepting. The ultimate goal of the branch is to enact Regulations and Cleanup Screening Levels so it can properly address the cleanup of contaminated sites in an efficient and timely manner.

Underground Storage Tank Branch. The Environmental Protection Agency's Dec. 22, 1998, deadline to upgrade all regulated underground storage tanks (UST) has just passed. In order to prevent releases from active tanks, all tanks were required to upgrade to meet current tank standards by that date.

The Underground Storage Tank (UST) Branch has been working for 12 years to educate owners and operators on the requirements of upgrading their tanks. The Kentucky underground storage tank program began in 1986. Since then 44,937 tanks have been registered and 27,688 tanks have been removed or closed to prevent groundwater or soil contamination. Over the past 18 months, the DWM field inspectors have managed to inspect 95 percent of all active tank facilities to ensure compliance with the current tank standards.

Currently the compliance rate has been determined to be 77.4 percent and is expected to increase daily. The UST Branch is working with 1,735 facilities that are not in compliance to require proper upgrading and/or permanent closure. Since 1988, there have been 9,637 confirmed contamination releases from tanks and 7,136 confirmed cleanups of the same tanks. The UST staff is reviewing 2,501 active cleanup sites.

Agency protects natural areas, biodiversity

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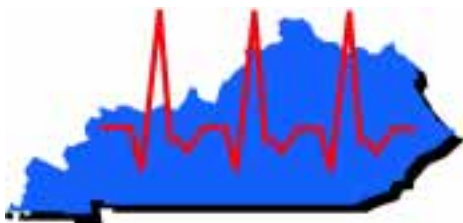
growing conditions for rare plants. Weather conditions prevented the completion of additional planned burnings. The Division of Forestry assisted.

- The KSNPC received funding from the 1998 General Assembly to establish a regional preserves manager position for Southeastern Kentucky. Over 35 percent of the commission's total preserve acreage are within five preserves located on Pine Mountain. The Southeast Regional Preserve Manager, Kyle Napier, began his duties in August.

Websites for small businesses

Continued from Page 9

Four sites developed by EPA's Office of Compliance include the CCAR-Green-Link-The Automotive Compliance Information Assistance Center at <http://www.ccar-green-link.org> The National Metal Finishing Resource Center at <http://www.nmfrc.org> The National Agricultural Compliance Assistance Center at <http://www.nacac.org> and The Printers National Compliance Assistance Center at <http://www.pneac.org>



EQC reports on state of environment

The 1998-99 *State of Kentucky's Environment* report continues the efforts of EQC over the past six years to chart environmental improvements and assess the many challenges that still confront the Commonwealth.

The report reveals that private and public sector investments have paid off in a cleaner environment. But there is still a long way to go. More than 50 charts and graphs track the state's progress in safeguarding drinking water, protecting water and air quality, promoting proper waste management, and reducing toxic risks.

The 1998-99 State of Kentucky's Environment reveals that private and public sector investments have paid off in a cleaner environment. But we still have a long way to go.

Drinking water. Generally speaking, drinking water supplied by 730 water systems to three million Kentuckians is safe for consumption. Trends reveal that violations at drinking water plants are declining. Most large systems, those serving 50,000 people or more, had few violations of drinking water rules during the past five years.

But if you get your water from a small system there may be cause for concern. Data reveal that 189 systems serving 3,000 people or less accounted for 90 percent of the 729 violations cited at drinking water plants in 1997. More than 38,000 people were at risk that year from systems with persistent violations of drinking water rules.

Water Quality. Over the past 25 years Kentuckians have seen significant improvements in the water quality of our rivers, streams and lakes. However, data indicate that nearly one-third of the 6,345 miles of rivers and streams monitored by

the state during 1996 were still impaired by pollution.

Agriculture, mining, and sewage treatment plants remain the leading sources of water pollution in the Commonwealth. Disease-carrying pathogens, often associated with untreated or improperly treated animal and human waste, are the most common pollutants detected in rivers and streams.

Trends reveal a general improvement of water quality in the 122 public lakes monitored, although progress has slowed during the past five years. Currently, one in four public lakes assessed were impaired by pollution.

Air Quality. Years of pollution controls on automobiles and at industrial plants have paid off in cleaner air across the Commonwealth. Since 1980, Kentucky has witnessed declining air concentrations of six common pollutants—lead, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter, and ground-level ozone. Some of these improvements have been more dramatic than others. For example, carbon monoxide air levels dropped 51 percent between 1980 and 1997 while ground-level ozone air concentrations fell by 21 percent. However, trends reveal that these improvements have leveled off in recent years.

Waste Management. Managing solid waste has long been a difficult task in Kentucky. But in the past decade the state has made significant gains in ensuring its proper and safe disposal. Since 1990, fifty-six substandard solid waste landfills have been closed and 25 state-of-the-art municipal landfills have been permitted. These facilities are permitted to provide 18.3 years of capacity.

The number of Kentuckians participating in garbage collection has reached an all time high in 1997 at 1.34 million households. An estimated 71 percent of Kentucky households participated in door-to-door garbage collection systems.

But participation rates vary greatly by county—from 100 percent in Jefferson County to 28 percent in Knox County.

Toxics. Data reveal that during 1996, industrial facilities totaling 429 reported generating 577 million pounds of toxic chemical by-products. Most of these chemicals were treated or recovered at the site of generation. About 8 percent of the toxics generated were released into the environment, 87 percent to the air.

To order a copy of the 1998-99 *State of Kentucky's Environment* report send a \$10 check payable to the Kentucky State Treasurer. Mail to EQC, 14 Reilly Rd. Frankfort, Ky. 40601.

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EQC is a seven-member citizen board created under state law with the following mission:

- To facilitate public understanding, discussion and resolution of environmental issues;
- To promote partnerships to improve and protect the environment;
- To monitor environmental trends;
- To advise state officials on environmental matters.

Conservation

Continued from Page 18

natural resources management at the Kentucky Leadership Center, Somerset.

Conservation districts offer many educational programs. The following is a partial list and not available in all or every county: sponsor teacher in-service day or workshops; sponsor environmental education days; provide conservation and environmental educational materials (books, videos and computer software); distribute tree seedlings and/or tree bags; provide conservation displays or speakers; sponsor students to forestry, 4-H or conservation camps; sponsor Water Watch groups or other environmental education groups; sponsor Soil and Water Stewardship Week; help with Arbor Day and Earth Day activities; promote and sponsor recycling, composting, and cleanup programs; provide grants for developing outdoor classrooms; provide assistance in planning, securing information and a list of supplies available to satisfy these needs.

These accomplishments happened because of strong partnerships among federal, state and local agencies working in cooperation with local conservation districts and 847 district supervisors.

Environmental Excellence awards presented

Continued from Page 1

Randy Seymour and John Seymour, Environmental Excellence Award for Heritage Land Conservation. This father and son team were recognized for an outstanding job managing their land that includes cattle, forest products, wildlife and endangered species of plants and animals.

Hopkins County Coal, LLC., Environmental Excellence Award for Mining Reclamation in Western Kentucky. Hopkins County Coal permit #854-0224 eliminated a highwall, buried coal refuse and improved water quality and revegetation.

Coal Mac Inc., Environmental Excellence Award for Mining Reclamation in Eastern Kentucky. Reclamation performed on permit #836-0229 by Coal Mac Inc. now provides an excellent opportunity for property owners and local residents to utilize an area virtually unusable prior to mining.

Redkin Laboratories Inc., Environmental Excellence Award for Leadership in Pollution Prevention. This Florence hair care manufacturing facility was recognized for its environmental health and safety program that reduced hazardous preservatives from its formulas and the amount of hazardous wastes stored on site.

Hitachi Automotive Products (USA) Inc., Environmental Excellence

Award for Industrial Environmental Leadership. The Harrodsburg plant received the award for its strong safety and environmental program. Accomplishments include a 50 percent reduction in volatile organic compounds and a 10 percent parts regrind process added to virgin materials.

Pride Inc., Environmental Excellence Award for Community Environmental Leadership. Pride Inc. of Hopkinsville cares for local parks, encourages children to pick up litter, plants 150 trees each year, and provides groups and volunteers with educational information regarding anti-littering, composting, water protection and recycling.

Southern Appalachian Recycling Inc. (SAR), Environmental Excellence Award for Environmental Education. SAR was recognized for the positive changes made to the Appalachian area of Kentucky by empowering Eastern Kentuckians to make good choices for solid waste disposal.

University of Kentucky, Environmental Excellence Award for Closing the Recycling Loop. The university's purchasing division was awarded for purchasing nearly \$1.3 million worth of printing paper, dual purpose paper and data paper—all made from recycled fiber.

Forestry

Continued from Page 15

The division also assists with supplying fire suppression tools to rural fire departments statewide. Through U.S. Forest Service grants, the division awarded \$23,000 in tools and equipment and loaned \$865,000 worth of federal excess property to rural fire departments last year. The division also trained fire department volunteers, Kentucky National Guardsmen, Job Corps volunteers, and state correctional/regional jail inmates in wildfire suppression.

Forest Health. The health of Kentucky's forest resources must be monitored closely. The division, in partnerships with the University of Kentucky and the U.S. Department of Agriculture's Forest Service and Animal and Plant Inspection Service, continues to monitor the forests of the Commonwealth for the detection of exotic pests and disease. Pests such as the gypsy moth caterpillars and diseases such as dogwood anthracnose could potentially kill their hosts if not controlled.

The division will be participating in a forest health monitoring program beginning in 2000. This program, administered by the U.S. Forest Service, will vastly improve the division's ability to detect the dangers that threaten Kentucky's valuable forest resources.

Education. Educating the citizens of the Commonwealth about the environmental and economic importance of Kentucky's forests is a vital part of the division's mission to protect and enhance the forest resources. Master logger training sessions, Project Learning Tree workshops, fire suppression and prevention training, classroom and civic group presentations and participation in a variety of other activities helped the division accomplish this task. The division strives daily to broaden the environmental knowledge of all Kentuckians and especially the private forestland owners. Ninety-three percent of Kentucky's 12.7 million acres of forestland is privately owned. "With accurate information and proper planning we can sustain Kentucky's forest resources well into the millennium," said Mark Matuszewski, division director.

Orchids of Kentucky poster update

An article published in the December 1998 issue of *Land, Air & Water*, notified our readers that the *Orchids of Kentucky* poster was unveiled in October, and donations were being requested to help pay for the printing costs.

Now, *Orchids of Kentucky* will be getting their big break in Tom Hank's next movie "Cast Away." The poster will be in the background of "Cast Away," a movie being made by Steven Spielberg's Dreamworks studio.

In "Cast Away," Tom Hanks portrays Chuck, a Federal Express agent marooned on an island in the South Pacific. The poster will appear in the home of Chuck's fiancée's mother, a biologist. Chuck and his fiancée visit her mother before the plane trip that leaves him marooned.

"There's a lot of pride among biologists in Kentucky, and we're really pumped up about this," said Jeff Hohman, an environmental supervisor for East Kentucky Power Cooperative. Hohman said Dreamworks set designers called state wildlife biologists in Tennessee looking for colorful posters and were referred to Kentucky.

The posters were produced by Hohman's company and sponsored by several other utility companies, state and federal agencies and private groups.

Orchids of Kentucky may be purchased for \$10 (including shipping) by contacting Frog Loggers, P.O. Box 25054, Lexington, Ky. 40524-5054.



Kentucky River Authority *Continued from Page 17*

The KRA is helping communities clean up illegal dumps along river banks. Along with the help of the Breathitt County Road Department, the KRA was able to help fund the cleanup of Spencer Bend and Troublesome Creek illegal dumps. The Breathitt County illegal dumps were located adjacent to the North Fork of the Kentucky River.

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